

Long-term Monitoring of Reef Fishes in Virgin Islands National Park

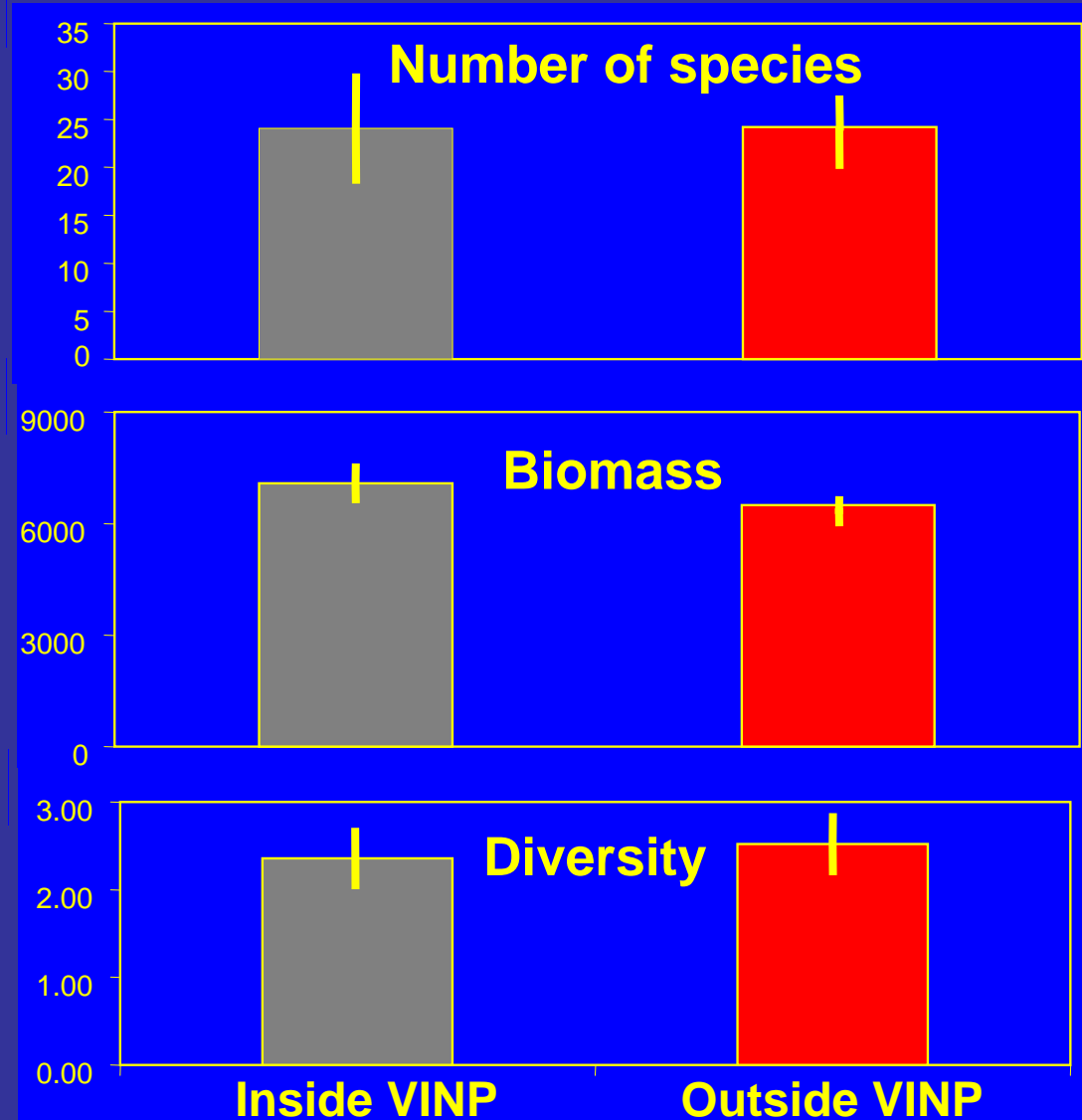
Alan Friedlander
&

Jim Beets

- 1) Does the Virgin Islands National Park protect living marine resources?
- 2) What are the long-term trends in coral reef assemblages?
- 3) Can we determine the status of conditions prior to monitoring?

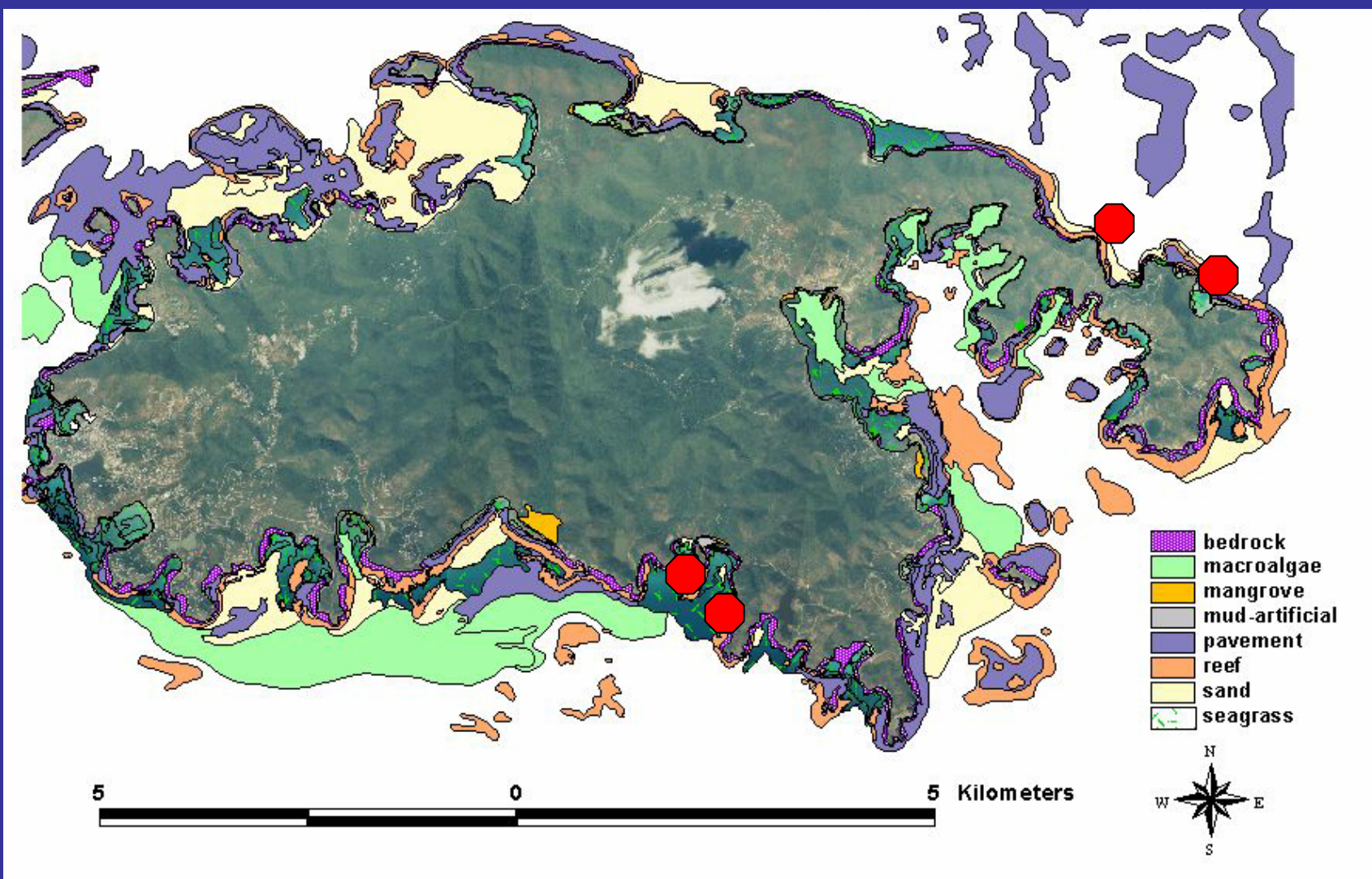
Reef assemblages are similar inside and outside of the national park

Coral reef fish metrics
similar inside and outside
Virgin Islands National Park



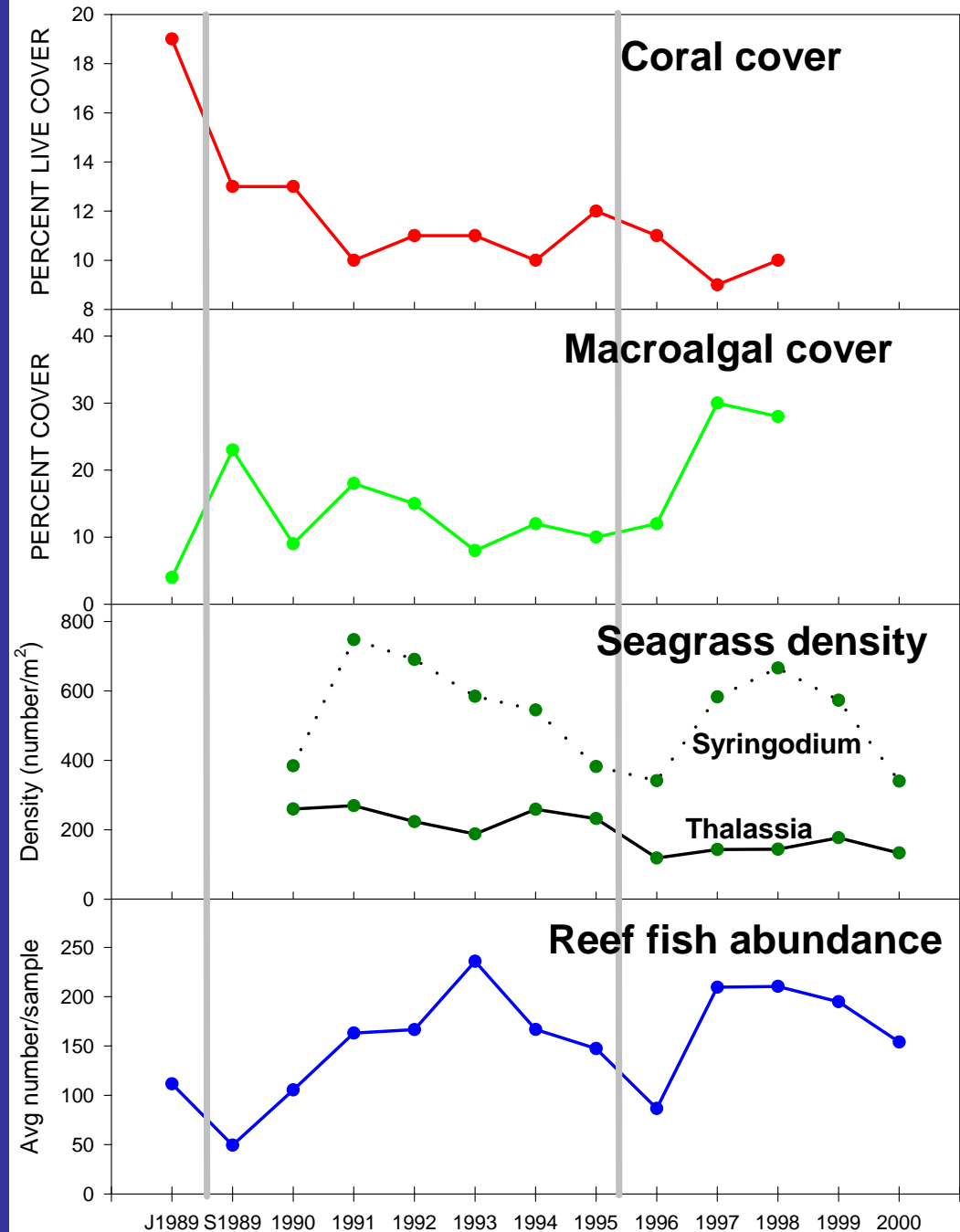
Long-term Monitoring Locations

based on resources, questions, and logistics

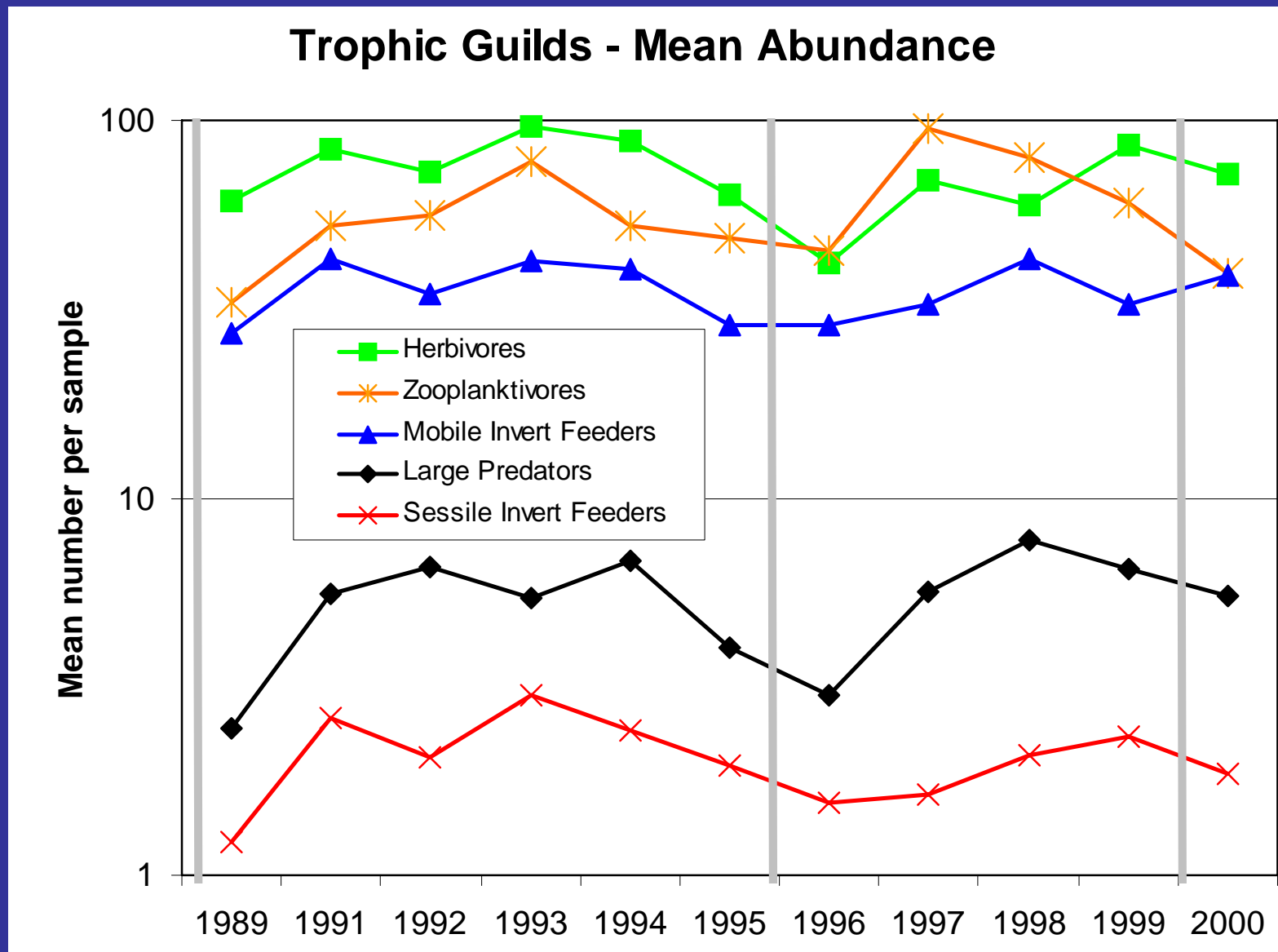


What are the long-term trends in coral reef assemblages?

1989-2000

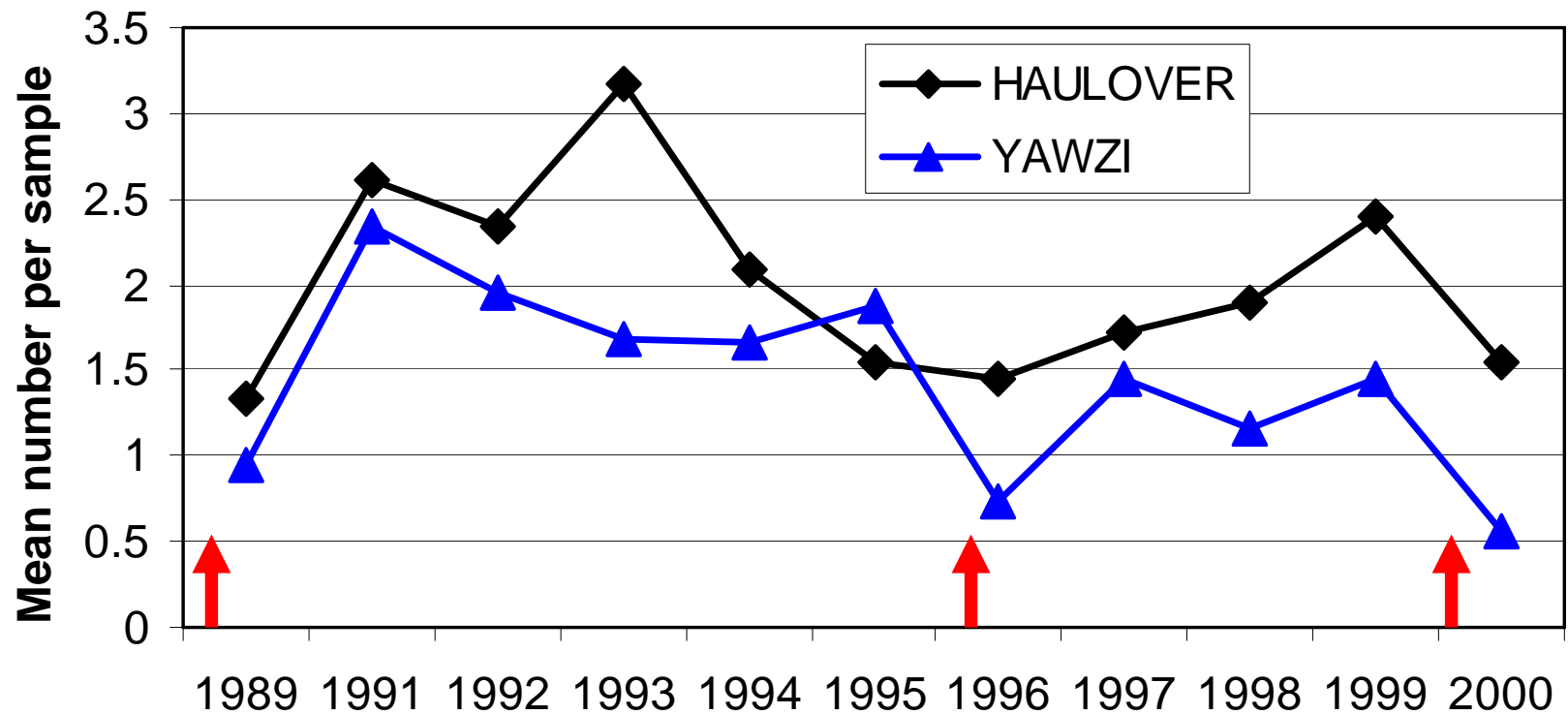


Trends in Coral Reef Fishes - Guilds



Trends in Coral Reef Fishes - Sites

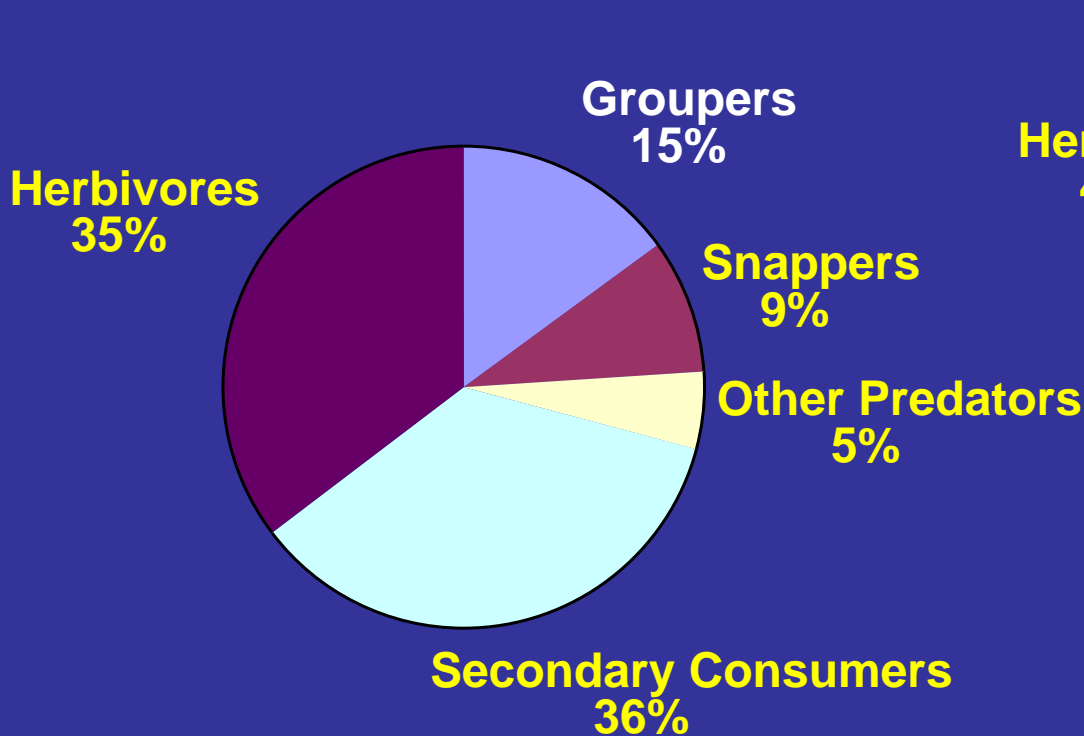
Sessile Invertebrate Feeder Abundance



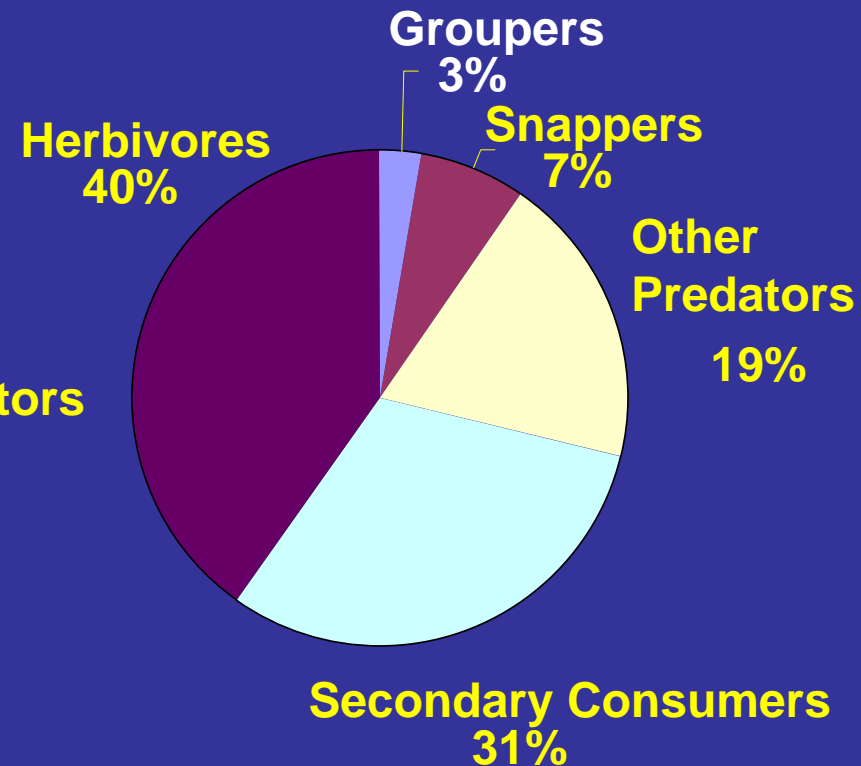
Can we determine the status of conditions prior to monitoring?



Historical biological data in U.S. Virgin Islands provide an earlier baseline for comparison

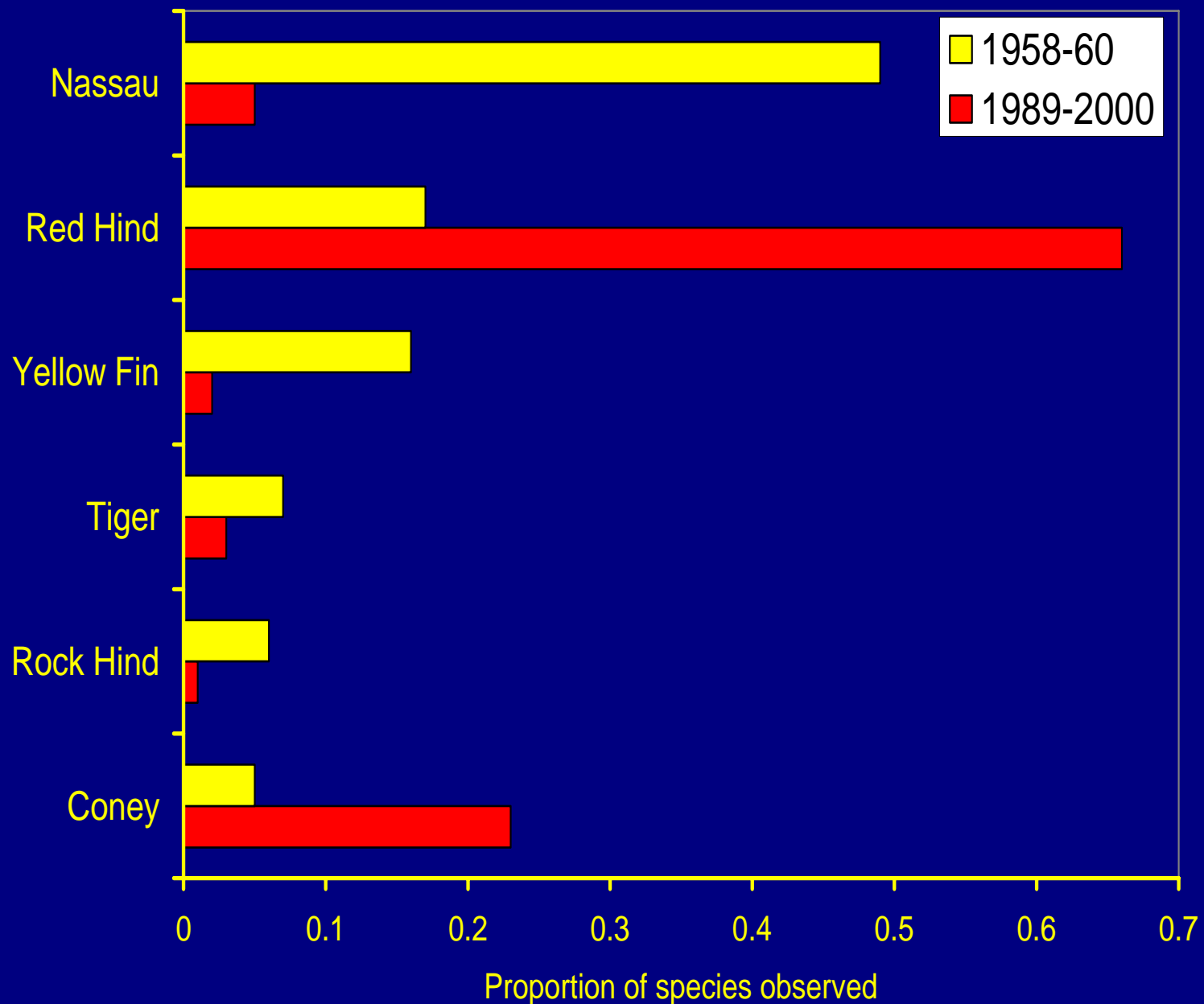


1960 – Poison Station
Greater Lameshur Bay

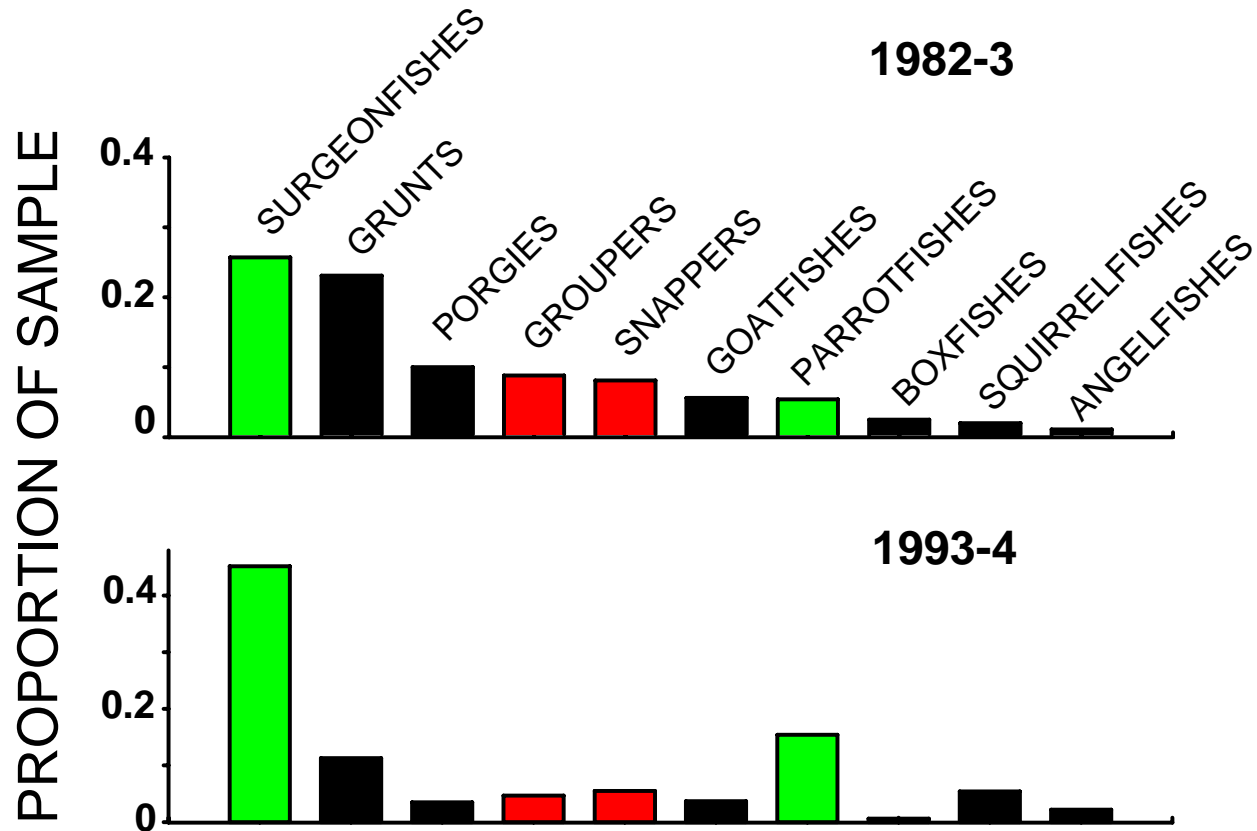


1989-2000 – Monitoring Data

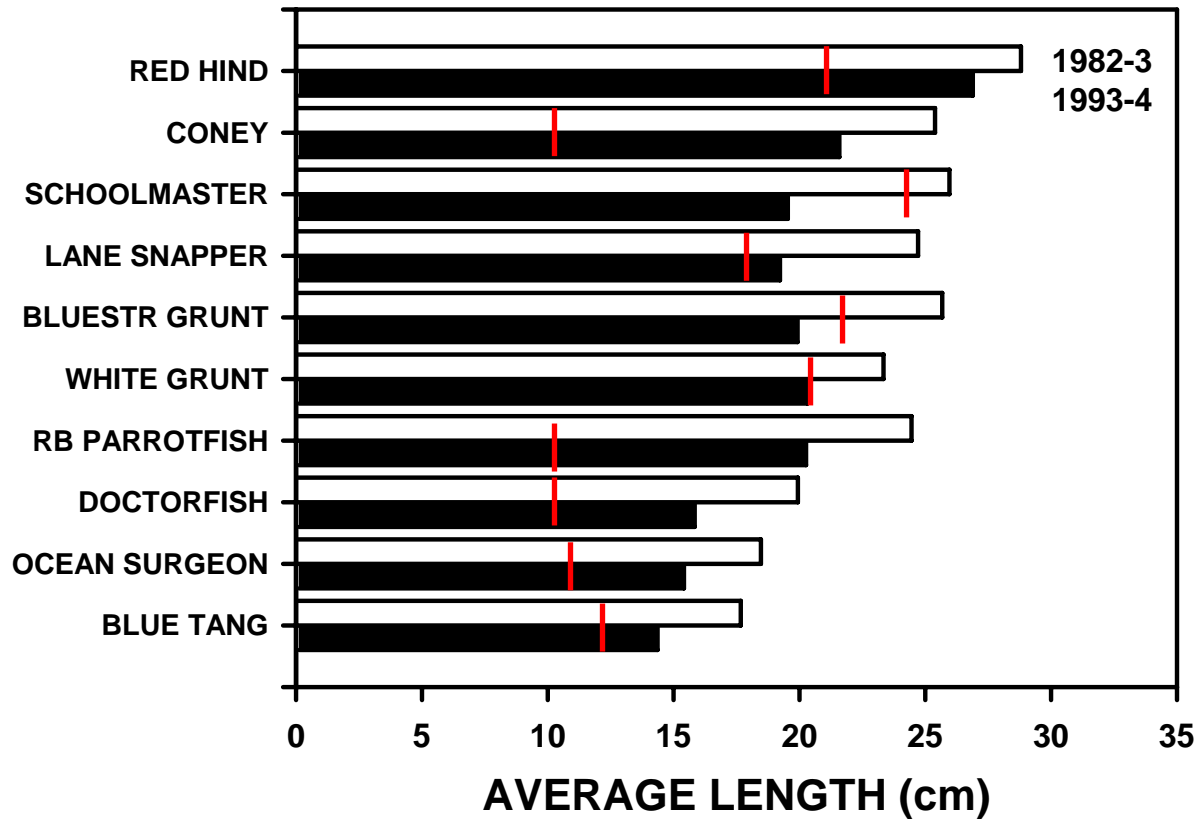
Changes in Grouper Species - U.S. Virgin Islands



Comparison of Proportion of Coral Reef Fishes Sampled in Trap Studies - 1982-3 vs 1993-4



Comparison of Sizes of Coral Fishes Sampled in Trap Studies - 1982-3 vs 1993-4



Conclusions

- Virgin Islands National Park is not functioning as an effective Marine Protected Area
- Long-term Monitoring demonstrates that many resources are in decline and in need of management action
- Current fish assemblages are responding to disturbance events
- Historical data provide information on the status of reefs prior to monitoring